

affixing a bone surface milling mechanism to the at least one anchor.

8. (Amended Twice) A method of spinal surgery comprising:

forming mounting holes in one or more vertebral bodies of a patient's spine;

implanting at least one anchor into one of the mounting holes;

utilizing the at least one anchor to mount a bone mill on the patient's spine;

milling confronting bone surfaces on and in the patient's spine to a predetermined surface shape;

removing said mill; and

mounting an intervertebral disc endoprosthesis having a predetermined outer surface shape so that outer surfaces of the intervertebral disc endoprosthesis mate with the previously milled bone surfaces and are capable of motion relative to each other.

9. (Amended Four Times) A method of endoprosthetic discectomy surgery comprising:

receiving information about the size, shape, and nature of a patient's involved natural spinal vertebral bodies and natural spinal vertebral discs from imaging devices;

removing at least the involved, damaged natural spinal disc material from the patient's spine;

forming dome-shaped, concave surfaces in adjacent spinal vertebral bodies;

implanting into the patient's spine, an intervertebral disc endoprosthesis comprising a resilient disc body and concave-convex elements that at least partly surround and are capable of movement relative to the resilient disc body in the patient's spine;

prior to forming the dome-shaped, concave surfaces in the adjacent spinal vertebral bodies, implanting at least one anchor into a hole having a predetermined position in an anterior surface of at least one adjacent vertebral body; and

affixing a bone surface milling mechanism to the at least one anchor.

10. (Amended) The method of surgery accordingly to claim 4, further comprising affixing the supports to the adjacent bone of the vertebral body.

19. (Amended Twice) A method of surgery comprising:

(a) forming concave surfaces in the endplates of confronting vertebral bodies,

(b) inserting between the formed concave surfaces an intervertebral disc endoprosthesis, comprising:

(1) confronting concave-convex supports, each support having an exterior convex surface adapted to mate with one of the formed concave surfaces,

(2) a resilient body interposed between the concave-convex supports, and comprising a gasket and nucleus,

(c) prior to forming the concave surfaces in the vertebral body endplates, implanting at least one anchor into a hole having a predetermined position in an anterior surface of at least one adjacent vertebral body, and

(d) affixing a bone surface milling mechanism to the at least one anchor.

25. (Amended) A method of inserting a prosthesis in a disc space between two adjacent vertebral bodies, comprising:

forming at least a portion of a hemispherical cavity in an endplate of one of the vertebral bodies, the endplate have a remaining surface surrounding the cavity;

inserting an endoprosthesis into the disc space and the cavity, the endoprosthesis including at least one support having an exterior convex surface adapted to mate with the cavity, and a body interposed between the at least one support and the second vertebral body, where the at least one support is movable relative to the body;

prior to forming at least the portion of a hemispherical cavity in the endplate of one of the vertebral bodies, implanting at least one anchor into a hole having a predetermined position in an anterior surface of at least one adjacent vertebral body; and

affixing a bone surface milling mechanism to the at least one anchor.